

REMARKS

The present application was filed on September 7, 2000 with claims 1-12. Claims 1-12 are all independent claims, and are all currently pending in this application.

In the Office Action dated June 18, 2002, the Examiner: (1) indicated that claims 4, 8 and 12 are allowable; and (2) rejected claims 1-3, 5-7 and 9-11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,208,897 to Hutchins (hereinafter "Hutchins") in view of an IBM Technical Disclosure Bulletin entitled "Using Alternate Spellings to Generate Baseforms" (hereinafter "IBM TDB").

Applicants wish to thank the Examiner for allowing claims 4, 8 and 12. In the Examiner's Statement of Reasons for Allowance, Applicants believe that the phrase "voice recognition process" should be replaced with "recognized word registration process."

In this response, Applicants non-substantively amend claims 1-12 to remove the reference letters (e.g., (a), (b), (c), . . .) in front of the individual elements of the claims. Applicants noted that in some of the claims, the reference letters were not completely consistent and thus decided to remove them completely so as to avoid any confusion.

Further, in this response, Applicants respectfully traverse the §103(a) rejection of claims 1-3, 5-7 and 9-11 based on the combination of Hutchins and IBM TDB for at least the following reasons.

Applicants assert that the combination of Hutchins and IBM TDB fails to state a prima facie case of obviousness as required under §103(a) (see M.P.E.P. §2143).

First, there is a clear lack of motivation to combine the references. Hutchins is directed to the performance of speech recognition, while IBM TDB is directed to building word models using sounds-like spellings for use in the performance of speech recognition. That is, the teachings in each reference are directed to completely different processes in speech recognition technology; one (Hutchins) toward actual real-time recognition of a spoken utterance, the other (IBM TDB) toward building models that may eventually be used in actual real-time recognition of a spoken utterance. However, there is nothing in the two references, nor in the Office Action, that suggest how one would actually combine the teachings of these two references.

Second, Applicants assert that even if combined, the combination fails to teach or suggest all of the limitations of the claims.

Regarding independent claims 1, 5 and 9, the invention recites a method, apparatus and program code, respectively, for performing recognized word registration. First, a word inscription specified by a user is obtained. A word dictionary is searched to obtain a sounds-like spelling corresponding to the word inscription. A pronunciation dictionary is searched to obtain a base form corresponding to the sounds-like spelling that has been obtained. Then, the base form is registered in a speech recognition dictionary.

Hutchins is cited as teaching such steps with the exception of the concept of sounds-like spellings, which is said to be taught by IBM TDB. Applicants strongly disagree. As explained above, all of Hutchins' operations have to do with actually recognizing speech uttered by a user. The techniques of Hutchins have nothing to do with the registration of words in a speech recognition dictionary, as in the elements of claims 1, 5 and 9. While IBM TDB may make mention of the use of sounds-like spellings in building word models for use by a speech recognition system, the Examiner's attention is directed toward lines 12-13 of IBM TDB where it is stated that the technique described therein "proposes that sounds-like spellings be given by the user when it is wished to provide better data to the spelling-to-sound rules." Such rules may be used to add a word to the vocabulary of the speech recognition system.

Thus, IBM TDB teaches that the user actually inputs sounds-like spellings during the new word registration process. The claimed invention, as explained in the background and summary sections of the present specification overcomes such a disadvantage. That is, as recited in claims 1, 5 and 9, after obtaining a word inscription specified by a user, the invention searches a word dictionary to obtain a sounds-like spelling corresponding to the word inscription. Thus, the user need not enter the sounds-like spelling since a word dictionary is searched to obtain a sounds-like spelling corresponding to said word inscription. A pronunciation dictionary is then searched to obtain a base form corresponding to the sounds-like spelling that has been obtained. Then, the base form is registered in a speech recognition dictionary. This is accomplished, for example as pointed out at page 13, line 21, of the present specification, "without a voice having to be recorded." This is not the case in the IBM TDB technique.

Thus, for at least the above reasons, Applicants request withdrawal of the §103(a) rejection of claims 1, 5 and 9.

Similar arguments apply to independent claims 2, 6 and 10, which also recite a method, apparatus and program code, respectively, for performing recognized word registration. In accordance with the claimed invention, a word inscription is specified by a user. A word dictionary is searched to obtain a plurality of sounds-like spellings that correspond to said word inscription and sounds-like spelling scores that correspond to the sounds-like spellings. The plurality of sounds-like spellings are displayed for the user. The sounds-like spelling that is selected by the user is obtained from among the plurality of sounds-like spellings. Then, a pronunciation dictionary is searched to obtain a base form and a pronunciation score corresponding to the sounds-like spelling that has been obtained. A determination is made as to whether the pronunciation score exceeds a predetermined threshold value. The base form is then registered in a speech recognition dictionary when the pronunciation score exceeds the predetermined threshold value.

Again, Hutchins has nothing to do with word registration and IBM TDB, for the same reasons as pointed out above, does not teach searching a word dictionary to obtain a plurality of sounds-like spellings that correspond to the word inscription and sounds-like spelling scores that correspond to the sounds-like spellings; displaying the plurality of sounds-like spellings for the user; obtaining the sounds-like spelling that is selected by the user from among the plurality of sounds-like spellings; searching a pronunciation dictionary to obtain a base form and a pronunciation score corresponding to the sounds-like spelling that has been obtained; determining whether the pronunciation score exceeds a predetermined threshold value; and registering the base form in a speech recognition dictionary when the pronunciation score exceeds the predetermined threshold value. The Office Action seems to point to IBM TDB for disclosing sounds-like spelling scores, and displaying sounds-like spellings to the user; however, Applicants find no such teachings in the reference. Also, since Hutchins has nothing to do with a word registration process, nothing therein teaches or suggests the elements of claims 2, 6 and 10.

Thus, for at least the above reasons, Applicants request withdrawal of the §103(a) rejection of claims 2, 6 and 10.

Lastly, similar arguments apply to independent claims 3, 7 and 11, which also recite a method, apparatus and program code, respectively, for performing recognized word registration. The claimed invention determines whether first voice information obtained for a user's voice matches

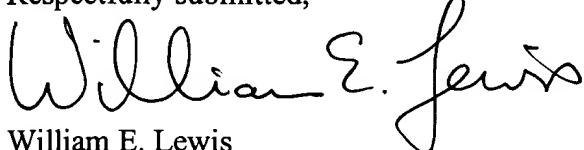
a predetermined condition. A speech recognition wizard panel that includes a new word input field and a sounds-like spelling input field is displayed on a display screen, when the voice information matches said predetermined condition. A new word and a sounds-like spelling that are entered in the speech recognition wizard panel are obtained. Second voice information based on the user's pronunciation provided for the new word and the sounds-like spelling is obtained. The second voice information, the new word and the sounds-like spelling are employed to specifically describe a base form. Then, the base form is added to a speech recognition dictionary. Neither Hutchins nor IBM TDB teach or suggest such a word registration technique that uses a speech recognition wizard panel, and such first and second voice information from the user. The Office Action seems to point to Hutchins for disclosing such a wizard panel and use of such user voice information; however, Hutchins has nothing to do with a word registration process. Also, no such details are disclosed in IBM TDB.

Thus, for at least the above reasons, Applicants request withdrawal of the §103(a) rejection of claims 3, 7 and 11.

It is believed that the claims of the application, i.e., claims 1-12, are patentably distinct over the art of record and are in condition for allowance. In the event that the Examiner believes that a telephone conference or a personal interview may facilitate resolution of any remaining matters, the undersigned may be contacted at the number indicated below. In view of the foregoing amendment and remarks, early and favorable reconsideration of this application is respectfully requested.

Attached hereto is a marked up version of the changes made to the application by the present amendment. The attached pages are captioned "Version with Markings to Show Changes Made."

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend claims 1-12 as follows:

1. (Amended) A recognized word registration method, for a speech recognition apparatus that includes a display screen and a voice input device, comprising the steps of:

- [(a)] obtaining a word inscription specified by a user;
- [(b)] searching a word dictionary to obtain a sounds-like spelling corresponding to said word inscription;
- [(c)] searching a pronunciation dictionary to obtain a base form corresponding to said sounds-like spelling that has been obtained; and
- [(d)] registering said base form in a speech recognition dictionary.

2. (Amended) A recognized word registration method, for a speech recognition apparatus that includes a display screen and a voice input device, comprising the steps of:

- [(a)] obtaining a word inscription specified by a user;
- [(b)] searching a word dictionary to obtain a plurality of sounds-like spellings that correspond to said word inscription and sounds-like spelling scores that correspond to said sounds-like spellings;
- [(c)] displaying said plurality of sounds-like spellings for said user;
- [(d)] obtaining said sounds-like spelling that is selected by said user from among said plurality of sounds-like spellings;
- [(e)] searching a pronunciation dictionary to obtain a base form and a pronunciation score corresponding to said sounds-like spelling that has been obtained;
- [(f)] determining whether said pronunciation score exceeds a predetermined threshold value; and
- [(g)] registering said base form in a speech recognition dictionary when said pronunciation score exceeds said predetermined threshold value.

3. (Amended) A recognized word registration method, for a speech recognition apparatus that includes a display screen and a voice input device, comprising the steps of:

[(a)] determining whether first voice information obtained for a user's voice matches a predetermined condition;

[(b)] displaying on said display screen, when said voice information matches said predetermined condition, a speech recognition wizard panel that includes a new word input field and a sounds-like spelling input field;

[(c)] obtaining a new word and a sounds-like spelling that are entered in said speech recognition wizard panel;

[(d)] obtaining second voice information based on said user's pronunciation provided for said new word and said sounds-like spelling;

[(e)] employing said second voice information, said new word and said sounds-like spelling to specifically describe a base form; and

[(f)] adding said base form to a speech recognition dictionary.

4. (Amended) A recognized word registration method, for a speech recognition apparatus that includes a display screen and a voice input device, comprising:

an initial registration step, including:

[(a1)] obtaining a word inscription specified by a user,

[(a2)] searching a word dictionary to obtain a plurality of sounds-like spellings that correspond to said word inscription and sounds-like spelling scores that correspond to said sounds-like spellings,

[(a3)] displaying said plurality of sounds-like spellings for said user,

[(a4)] obtaining said sounds-like spelling that is selected by said user from among said plurality of sounds-like spellings,

[(a5)] searching a pronunciation dictionary to obtain a base form and a pronunciation score corresponding to said sounds-like spelling that has been obtained,

[(a6)] determining whether said pronunciation score exceeds a predetermined threshold value, and

[(a7)] registering said base form in a speech recognition dictionary when said pronunciation score exceeds said predetermined threshold value; and

    a registration step at the speech recognition time, including:

[(b1)] determining whether first voice information obtained for a user's voice matches a predetermined condition,

[(b2)] displaying on said display screen, when said voice information matches said predetermined condition, a speech recognition wizard panel that includes a new word input field and a sounds-like spelling input field,

[(b3)] obtaining a new word and a sounds-like spelling that are entered in said speech recognition wizard panel,

[(b4)] obtaining second voice information based on said user's pronunciation provided for said new word and said sounds-like spelling,

[(b5)] employing said second voice information, said new word and said sounds-like spelling to specifically describe a second base form, and

[(b6)] adding said second base form to a speech recognition dictionary.

5. (Amended) A speech recognition apparatus, which includes a display screen and a voice input device, comprising:

[(a)] a recognized word registration unit for obtaining a word inscription specified by a user;

[(b)] a sounds-like spelling generator for searching a word dictionary to obtain a sounds-like spelling corresponding to said word inscription;

[(c)] a base form generator for searching a pronunciation dictionary to obtain a base form corresponding to said sounds-like spelling that has been obtained; and

[(d)] a speech recognition dictionary in which said base form is registered.

6. (Amended) A speech recognition apparatus, which includes a display screen and a voice input device, comprising:

[(a)] a recognized word registration unit for obtaining a word inscription specified by a

user;

[(b)] a sounds-like spelling generator for searching a word dictionary to obtain a plurality of sounds-like spellings that correspond to said word inscription and sounds-like spelling scores that correspond to said sounds-like spellings, and for obtaining said sounds-like spelling that is selected by said user from among said plurality of sounds-like spellings on said display screen;

[(c)] a base form generator for searching a pronunciation dictionary to obtain a base form and a pronunciation score corresponding to said sounds-like spelling that has been obtained; and

[(d)] a speech recognition dictionary in which said base form is registered when said pronunciation score exceeds a predetermined threshold value.

7. (Amended) A speech recognition apparatus, which includes a display screen and a voice input device, comprising:

[(a)] a recognized word registration unit for determining whether first voice information obtained for a user's voice matches a predetermined condition;

[(b)] a speech recognition wizard for displaying on said display screen, when said voice information matches said predetermined condition, a speech recognition wizard panel that includes a new word input field and a sounds-like spelling input field;

[(c)] a voice input unit for obtaining second voice information based on said user's pronunciation provided for a new word and a sounds-like spelling that are entered in said speech recognition wizard panel;

[(d)] a base form generator for employing said second voice information, said new word and said sounds-like spelling to specifically describe a base form; and

[(e)] a speech recognition dictionary to which said base form is added.

8. (Amended) A speech recognition apparatus comprising:

[(a)] a display screen;

[(b)] a voice input unit for entering voice information generated by a user's voice;

[(c)] a speech recognition engine for recognizing said voice information;

[(d)] a recognized word registration unit for obtaining a word inscription specified by a

user;

[(e)] a sounds-like spelling generator for searching a word dictionary to obtain a plurality of sounds-like spellings that correspond to said word inscription and sounds-like spelling scores that correspond to said sounds-like spellings, and for, when one of said plurality of sounds-like spellings is selected by said user, obtaining said sounds-like spelling that is selected;

[(f)] a base form generator for searching a pronunciation dictionary to obtain a base form and a pronunciation score corresponding to said sounds-like spelling that has been obtained; and

[(g)] a speech recognition dictionary in which a base form is registered when said pronunciation score exceeds said predetermined threshold value,

[(c2)] wherein said speech recognition engine determines whether first voice information obtained for a user's voice matches a predetermined condition, and activates, when said voice information matches said predetermined condition, a speech recognition wizard panel that includes a new word input field and a sounds-like spelling input field,

[(d2)] wherein said sounds-like spelling generator obtains second voice information based on said user's pronunciation provided for a new word and a sounds-like spelling that are entered in said speech recognition wizard panel;

[(e2)] wherein said base form generator employs said second voice information, said new word and said sounds-like spelling to specifically describe a second base form; and

[(f2)] wherein said second base form is stored in said speech recognition dictionary.

9. (Amended) A storage medium on which is stored a recognized word registration program that is to be executed by a speech recognition apparatus that includes a display screen and a voice input device, said recognized word registration program comprising:

[(a)] program code for instructing said speech recognition apparatus to obtain a word inscription specified by a user;

[(b)] program code for instructing said speech recognition apparatus to search a word dictionary to obtain a sounds-like spelling corresponding to said word inscription;

[(c)] program code for instructing said speech recognition apparatus to search a pronunciation dictionary to obtain a base form corresponding to said sounds-like spelling that has

been obtained; and

[(d)] program code for instructing said speech recognition apparatus to register said base form in a speech recognition dictionary.

10. (Amended) A storage medium on which is stored a recognized word registration program that is to be executed by a speech recognition apparatus that includes a display screen and a voice input device, said recognized word registration program comprising:

[(a)] program code for instructing said speech recognition apparatus to obtain a word inscription specified by a user;

[(b)] program code for instructing said speech recognition apparatus to search a word dictionary to obtain a plurality of sounds-like spellings that correspond to said word inscription and sounds-like spelling scores that correspond to said sounds-like spellings;

[(c)] program code for instructing said speech recognition apparatus to display said plurality of sounds-like spellings for said user;

[(d)] program code for instructing said speech recognition apparatus to obtain said sounds-like spelling that is selected by said user from among said plurality of sounds-like spellings;

[(e)] program code for instructing said speech recognition apparatus to search a pronunciation dictionary to obtain a base form and a pronunciation score corresponding to said sounds-like spelling that has been obtained;

[(f)] program code for instructing said speech recognition apparatus to determine whether said pronunciation score exceeds a predetermined threshold value; and

[(g)] program code for instructing said speech recognition apparatus to register said base form in a speech recognition dictionary when said pronunciation score exceeds said predetermined threshold value.

11. (Amended) A storage medium on which is stored a speech recognition process program that is to be executed by a speech recognition apparatus that includes a display screen and a voice input device, said speech recognition process program comprising:

[(a)] program code for instructing said speech recognition apparatus to determine whether

first voice information obtained for a user's voice matches a predetermined condition;

[(b)] program code for instructing said speech recognition apparatus to display on said display screen, when said voice information matches said predetermined condition, a speech recognition wizard panel that includes a new word input field and a sounds-like spelling input field;

[(c)] program code for instructing said speech recognition apparatus to obtain a new word and a sounds-like spelling that are entered in said speech recognition wizard panel;

[(d)] program code for instructing said speech recognition apparatus to obtain second voice information based on said user's pronunciation provided for said new word and said sounds-like spelling;

[(e)] program code for instructing said speech recognition apparatus to employ said second voice information, said new word and said sounds-like spelling to specifically describe a base form; and

[(f)] program code for instructing said speech recognition apparatus to add said base form to a speech recognition dictionary.

12. (Amended) A storage medium on which is stored a speech recognition process program that is to be executed by a speech recognition apparatus that includes a display screen and a voice input device, said speech recognition process program comprising:

[(a)] program code for instructing said speech recognition apparatus to obtain a word inscription specified by a user;

[(b)] program code for instructing said speech recognition apparatus to search a word dictionary to obtain a plurality of sounds-like spellings that correspond to said word inscription and sounds-like spelling scores that correspond to said sounds-like spellings;

[(c)] program code for instructing said speech recognition apparatus to display said plurality of sounds-like spellings for said user;

[(d)] program code for instructing said speech recognition apparatus to obtain said sounds-like spelling that is selected by said user from among said plurality of sounds-like spellings;

[(e)] program code for instructing said speech recognition apparatus to search a pronunciation dictionary to obtain a base form and a pronunciation score corresponding to said

sounds-like spelling that has been obtained;

[(f)] program code for instructing said speech recognition apparatus to determine whether said pronunciation score exceeds a predetermined threshold value;

[(g)] program code for instructing said speech recognition apparatus to register said base form in a speech recognition dictionary when said pronunciation score exceeds said predetermined threshold value;

[(h)] program code for instructing said speech recognition apparatus to determine whether first voice information obtained for a user's voice matches a predetermined condition;

[(i)] program code for instructing said speech recognition apparatus to display on said display screen, when said voice information matches said predetermined condition, a speech recognition wizard panel that includes a new word input field and a sounds-like spelling input field;

[(j)] program code for instructing said speech recognition apparatus to obtain a new word and a sounds-like spelling that are entered in said speech recognition wizard panel;

[(k)] program code for instructing said speech recognition apparatus to obtain second voice information based on said user's pronunciation provided for said new word and said sounds-like spelling;

[(l)] program code for instructing said speech recognition apparatus to employ said second voice information, said new word and said sounds-like spelling to specifically describe a second base form; and

[(m)] program code for instructing said speech recognition apparatus to add said second base form to a speech recognition dictionary.